

REMARKS

Claims 1-6,13-15, 20-25, 27 and 28, all the claims pending in the application, are rejected. No claims are amended or cancelled.

Claim Rejections - 35 USC § 102

Claims 1-6, 13-15, 20-25, 27-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Terada et al. (JP 2002-158199). This rejection is traversed for at least the following reasons.

Terada

The Examiner asserts that Terada discloses all of the features of the invention, including a cleaning sheet and a method of use, the cleaning sheet comprising a cleaning layer containing an acrylic resin and a urethane resin (see paragraphs 0007-0009), wherein the adhesive layer has a thickness of 5-100 microns and a modulus of 0.25N/10mm (see paragraphs 0011 and 0016).

Applicants respectfully submit that Terada does not disclose "an elastic modulus within a range of 0.5-100 N/mm² claimed in the present invention. The Examiner asserts in Item 4 of the Office Action that Terada mentions "a modulus of 0.25 N/10mm". However, Terada does not mention about "modulus" but "peeling strength of usual adhesive layer under peeling angle of 180° from the silicon wafer" . In this regard, the Examiner's assertion is incorrect.

Terada and the present invention differ in their use/function. In other words, the present invention is directed to a cleaning sheet to remove foreign matters adhering on the tip of the probe needle of a probe card, which is used for conduction testing of chips formed on a semiconductor wafer. In the present invention, after the tip of the probe needle is stuck into the cleaning sheet, the probe needle is drawn out from the cleaning layer as to remain foreign matters in the cleaning sheet. Meanwhile, Terada discloses a cleaning sheet for removing foreign matters adhering on the device for producing a semiconductor wafer or a printed board. The cleaning sheet attached transporting material such as silicon wafer is transported in the device and the foreign matters are removed from the surface of the device by adhering to the adhesive cleaning sheet.

Claim Rejections - 35 USC § 103

Claims 19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terada as applied to claims 1-6, 13-15, 20-25, 27-28 above, and further in view of Amami et al. (JP 09- 129577). This rejection is traversed for at least the following reasons.

Terada

The Examiner asserts the analysis of Terada as set forth against claims 1-6, 13-15, 20-25, 27-28 but admits that Terada does not specify the polyurethane is formed from reacting a polyol and a polyisocyanate before irradiation. The Examiner looks to Amami for such disclosure.

Amami

Specifically, the Examiner looks to Amami solely for a disclosure of “an adhesive sheet for wafer bonding, the adhesive comprising a urethane acrylate system wherein an isocyanate urethane prepolymer is formed by reacting a polyol and a polyisocyanate before irradiation in the presence of acrylate (see paragraphs 0036-0037).”

Notwithstanding the Examiner’s analysis, the use/function of Terada or Amami is substantially different from that of the present invention.

Amami Focused on a Peeling Problem

Amami discloses an adhesive sheet for holding wafer in producing semiconductors, not for cleaning purpose. As the Examiner indicates, in Amami's disclosure, the adhesive sheet may be easily peeled off from the wafer such that the adhesiveness may be reduced by irradiating UV rays after adhering to the wafer. However, neither Terada nor the present invention requires peeling off the adhesive sheet. More specifically, in Amami, prior to irradiation, an adhesive sheet is formed and then its adhesiveness is reduced by irradiation. On the contrary, the present invention discloses that an adhesive layer is formed by irradiation; therefore, the production process of the present invention obviously differs from Amami.

No Motivation for Combining Amami and Terada

As mentioned above, Terada differs from Amami in use/function, thus there is no motivation to combine Terada and Amami. Therefore, there is no ground to assert that the

present invention is unpatentable over Terada in view of Amami. In addition, even the combination of Terada and Amami does not provide any teachings or suggestions leading to a cleaning sheet or its producing method claimed in the present invention.

Chemical Step Differs

Incidentally, claims 19 and 26 of the present invention claims the reacting a polyol and a polyisocyanate in the presence of a vinyl monomer to form a urethane polymer. On the other hand, Amami teaches the mixing a urethane polymer with an acrylic polymer and irradiating the obtained mixture with UV radiation to cure the urethane polymer. Thus, the step of this invention is different from that of Amami.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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